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Tourism No Gentler on Baikal Than Industry

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While it creates a limited number of jobs in the local economy, increasing tourism is a serious threat to Baikal. **Sergei Porter**

IRKUTSK — There are many ways to describe Lake Baikal: the world's oldest and deepest freshwater lake, the Pearl of Siberia, and a perennial headache for Russia's environmentalists.

For five decades, environmentalists have been battling to close a controversial pulp and paper mill on the lake's southern shore.

That battle may finally draw to a close later this month, as the government decides whether to renew the factory's license to release effluent into the lake.

But tourism, the economic alternative to polluting heavy industry proposed by both government and many environmentalists, is bringing its own problems.

Two other words that could be used to describe Lake Baikal are ancient and huge. Snaking 636

kilometers — but spanning only 80 kilometers at its widest point — along the rift valley where it formed 25 million years ago, it has a surface area the size of Belgium.

It plunges to depths of 1,637 meters, though the average depth is a more pedestrian 740 meters, still making it the deepest lake in the world and allowing it to hold 20 percent of the world's fresh water.

Its famously clear waters and unique ecosystem earned the lake world heritage status in 1996.

But earlier this year, that title was nearly lost because of the continued operation of the Baikalsk Pulp and Paper Mill.

In the end, the lake escaped that ignominy, as experts gathered at UNESCO's world headquarters decided that Baikal's significance for the planet should remain recognized despite the problems it faced.

But UNESCO still made it clear that it is losing patience, calling for either an end to the release of effluent into the lake or closure of the mill by December.

THE MILL

Opened in 1966 to produce high-quality bleached pulp using the lake's unusually pure fresh water, the Baikalsk Pulp and Paper Mill is the main employer in the town of Baikalsk, a settlement of 13,600 people built specifically to service the plant.

It is also enemy No. 1 for Russia's environmentalists, who have been trying to close it down almost since it was opened.

Environmentalists say toxic dioxins and other harmful by-products released back into the lake cause genetic mutations in fish and other lake life, wipe out large numbers of endemic species near the factory, and even affect the quality of local drinking water.

The fight to close the mill in Soviet times was credited with laying the foundations for the civil society movements that emerged during perestroika. Today, locals continue to campaign against the factory.

The matter long ago mutated from a social to a political issue, and today the question of whether to close, modernize or modify the mill is one of most pressing political issues in the Irkutsk region.

The current governor of the region, Sergei Yeroshchenko, has said the plant faces a stark choice: either modernize and reconvert to closed-cycle production, or close.

The plant briefly switched to a "closed water cycle" without releasing effluent into the lake after the Federal Environmental Protection Service sued it over discharges in 2007.

But that forced it to end production of its most lucrative product, bleached cellulose. As a result, the plant soon ran up massive debts, went bankrupt and was closed in late 2008.

Just less than a year later, Vladimir Putin, who was prime minister at the time, joined

scientists using mini-submarines to survey the lakebed in 2009.

When the researchers failed to find any ecologically hazardous substances, he pronounced the lake in good enough condition to allow the plant to reopen under outside administration and return to producing bleached cellulose, to the chagrin of environmentalists.

One reason for Putin's decision was economic. Bleached cellulose production may help the plant's debtors, which include Alfa Bank and Oleg Deripaska's Basic Element, recoup some of the tens of millions of dollars they are owed.

It also provides crucial jobs. About 1,700 of Baikalsk's 4,134 workers are employed at the mill, and for the workers laid off in 2008, there were few options for new employment.

Official figures estimate that only about 300 people are involved in tourism. Some make a living by leasing apartments to vacationers, and others sell homegrown fruit and vegetables.

Defenders of the factory argue that the pollution is relatively localized. Even according to Baikal Environmental Wave, a local environmental group that wants the factory closed, about 20 square kilometers of the lakebed has been polluted, and polluted water is found in an area of about 90 square kilometers — about 0.3 percent of the lake's total surface area.

For its part, Baikalsk Pulp and Paper Plant says it has organized its waste treatment procedures and regularly submits reports on its wastewater.

A 2010 report on the health of the lake prepared by the Natural Resources and Environment Ministry found a marked reduction in lignite, chlorides and other pollutants from the mill compared with results from 2004.

The mill's experts argue that those figures show that the factory's waste is chemically little different from that produced during the natural decay of timber.

"The Natural Resources and Environment Ministry's data match the findings of the mill's own environmental safety department," a representative of the mill said. "The environmental protection measures taken by the mill have already made it possible to minimize the wastewater's impact on adjacent waters. Planned modernization will reduce its impact to practically zero."

Such arguments are not accepted by opponents of the mill, however, who point out that there is a 45-year backlog of waste stored in slurry pits that needs processing.

The factory may be shut for good this month. Baikalsk Pulp and Paper Mill's permit to discharge into the lake, which is essential to its operation, expires on August 15, and Vedomosti reported in July that workers have been warned of imminent layoffs if the Natural Resources and Environment Ministry does not issue a renewal.

Other reports have said plant executives, resigned to closure, are preparing to close up shop on August 16.

But this muddled question is unlikely to be settled anytime soon. In June, Deputy Prime Minister Arkady Dvorkovich directed the ministry to renew the permit, and some expect that

when push comes to shove, the government will decide to keep the plant open.

NEW SECTION

The mill, however, is neither the first nor the last problem of the great lake.

Since ancient times, residents of the Baikal region have been exploiting the riches of the lake and the surrounding taiga for fish, fur-bearing animals, nuts and berries, medicinal herbs and timber.

By the 20th century, pressure on the local ecosystem forced a whole range of unique local species — including the Barguzin sable, the Baikal sturgeon, and the omul, an endemic whitefish species related to salmon — into decline, while intense deforestation silted up the rivers that feed the lake.

Since the 1950s, a building boom has brought new settlements and industrial developments on Baikal's western shore, and the Baikal-Amur Mainline Railway was built along the southern shore.

Use of agricultural chemicals increased, and the deforestation played havoc with fish spawning sites.

As the Soviet authorities slowly realized that even Baikal's bountiful riches needed time to recover from merciless development, several conservation areas and national parks were established around the lake, islands of almost virgin nature where any economic or human activity was restricted.

Logging and the practice of floating timber was curtailed, and a 10-year ban on omul fishing in 1969 helped the population make a substantial recovery.

Catches now amount to a relatively healthy 2,000 to 3,000 tons a year. Baikal sturgeon, which take years to mature, are not doing as well, and a blanket ban on fishing for them introduced over 50 years ago remains in place.

A more serious problem comes from lakeshore settlements with inadequate water treatment.

More than 80,000 people live in small towns and villages on the shores of Baikal, flushing approximately 15 million cubic meters of waste into the lake per year, much of it carrying phosphorus, nitrogen compounds and E. coli.

But the principal source of pollution comes from somewhere else entirely.

The Selenga River, the largest to flow into Baikal, rises in Mongolia and meanders across the Buryat republic before emptying into the lake.

On the way, it picks up agricultural chemicals, industrial waste and sewage from large industrial cities such as Ulan-Ude and Selenginsk.

Another paper factory — the Selenginsk Pulp and Carton Mill, which was opened in 1973 about 60 kilometers upstream from Baikal — has been using a closed-water cycle since 1991.

But the enterprise still emits more than 10,000 cubic meters of waste in atmospheric pollution a year, much of which later seeps into the waters of the Selenga, environmentalists say.

A 2006 study found concentrations of heavy metals including zinc, lead and copper at one-and-a-half to two times the normal levels in the Selenga delta, a principal spawning ground for omul.

Environmentalists believe that the Selenga is the single largest source of pollution in Baikal, dwarfing the contamination wrought by the Baikalsk paper plant.

And the problem is growing. The 2010 study of Baikal found that the Selenga carried 87 percent of suspended matter into the lake, up from 73 percent in 2009.

The inflow of oil products has increased by 11 percent, and the proportion of resins and asphaltenes in the hydrocarbon volume had almost doubled.

Engineering

While agriculture and industry pollute Baikal and its rivers, another Soviet-era engineering triumph presents a different kind of threat.

The 1950s-built Irkutsk hydroelectric plant, the first of four dams built astride the Angara River, the lake's only outflow, raised the level of Baikal by about a meter.

Rapid fluctuations produced when sluice gates are opened put extreme stress on both animal and plant life across the entire Baikal ecosystem. They cause massive disturbance and mixing in the water and severe erosion around the shoreline.

Especially alarming is the dam's impact on fish life. When water levels fall, spawning grounds of valuable species are exposed above the waterline, and the eggs are left to perish.

As a result, sturgeon and whitefish species are being replaced with Siberian roach, river perch and ruffe.

Vacations in the Sun

Aware of the economic necessity of the Baikalsk mill and other plants, both environmentalists and local authorities have turned to tourism as a potentially cleaner source of income.

Not all those efforts have been successful, however. There is a small ski resort in Baikalsk, but ironically, industry experts say the pungent emissions from the paper mill make tourism in the town a hard sell.

Incidentally, the plant's management insists that its airborne emissions do not exceed the average rate for the Irkutsk region.

Nonetheless, the flow of tourists to the area is increasing every year, and with the establishment of special economic zones in Buryatia and the Irkutsk region for tourism development, that growth is likely to continue.

But now, some environmentalists are warning that the growing influx of vacationers could be an even greater threat to the Pearl of Siberia.

Take a walk through the woods on Olkhon Island, the lake's largest and one of its most famous beauty spots, and just a few steps off the normal tourist route you will stumble on an unbelievable amount of garbage.

Trash dumps in Baikal's coastal zone are expressly forbidden under Russian law, but because the legislation fails to define responsibilities or allocate funds for clearing any dumps that do appear, the only clean-ups are conducted by volunteers.

About 1,500 independent tourists in 700 cars visit Olkhon every day in peak season, and that doesn't include package tours.

Local authorities estimate that 60,000 tourists and 4,000 vehicles have visited the island so far this summer alone, a burden local biologists believe is unsustainable.

"The environment of Olkhon has suffered serious losses. Several bird species that used to nest on the island have vanished, and endemic plant numbers are falling," said Vitaly Ryabtsev, deputy research director of the Baikal national park. "But we easily find spent shells from hunting weapons along the shore. And they were hardly shooting at bottles," Ryabtsev said.

"Close to the village of Elga on Lake Khonkhoy, there is a sandbar separating the lake from the Baikal gulf," he added. "This sandbar is now crisscrossed by a network of roads. There are tent campsites. This is one of three sites hosting endemic Baikal plants, and it is disappearing before our very eyes."

Some conservationists are pushing for the island to be closed to visitors altogether in a bid to halt the ever-mounting flow of garbage.

But tourism is a growing business in the region, and far from imposing a ban, the authorities of the Olkhon district are debating building a new causeway to the island.

Few of the environmentalists who have battled tirelessly — and often fruitlessly — against the Baikalsk Pulp and Paper Mill hold out much hope of countering this new threat.

The problem for those dedicated to preserving Lake Baikal is quite simple, said Marina Rikhvanova, co-chair of Baikal Environmental Wave: environmentalists' suggestions are simply "not taken seriously."

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